

✓ *Aster frondosus* (Nutt.) T. & G. Fl. No. Am. 2:165. 1841.

Brachyactis frondosa Gray, Proc. Am. Acad. 8:647. 1873.

The first station to be reported from Southern California is Baldwin Lake, San Bernardino Mts., where the species was collected May 15, 1924 on the moist alkaline shore, *Peirson* 4595; and by *Johnston*, July 5, 1924.

✓ *Chrysothamnus Parryi* subsp. *asper* (Greene) Hall & Clements, Carneg. Inst. Pub. 326:200. 1923.

Chrysothamnus asper Greene, Leaflets Bot. Obs. 1:80. 1904.

Reported by Hall and Clements from as far south as Alamo Mt., Ventura Co. Collected between Arrastre Flats and Saragosa Spring, San Bernardino Mts., at 7,500 ft. alt., *I. M. Johnston*, Sept. 1, 1924. It is there locally frequent under pines as a low lax spreading shrub, 0.5-1.5 ft. tall.

Erigeron lonchophyllus Hook., Fl. Bor. Am. 1:18. 1834.

I have found no reference to the occurrence of this species in Southern California. The following collections can be reported, all from the San Bernardino Mts.: Big Meadows, *Hall* 7592, in 1906 (Univ. Calif. Herb., distributed as *E. divergens*), *Munz & Johnston* 8509, at 7,000 ft., July 14, 1924, and *Munz & Johnston* 8656, at 7,100 ft., July 16, 1924; South Fork of Santa Ana River, at 7,600 ft., Aug. 22, 1922, *Munz* 6172.

Lygodesmia spinosa Nutt. Trans. Am. Phil. Soc. N. S. 7:444. 1841.

Previously known in our region only from the San Gabriel Mts., (*Munz*, Bull. So. Calif. Acad. 23:132. 1924). It grows also on the desert slopes of the San Bernardino Mts., where it was collected at 7,000 ft. alt., on a slope of Gold Mt. near Baldwin Lake, *I. M. Johnston*, July 5, 1924.

DESCRIPTION OF A NEW PECTEN FROM VENEZUELA, S. A.

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Pecten (Lyropecten) arnoldi, n. sp.

Description: Shell slightly broader than high, subequilateral, subequivalve, medium thickness, submargins with fine, close, undulating growth lines; base rounded; sides slightly curving out near the ends. Right valve slightly nodose in the first stages of growth; with nine or ten broad flat ribs with three or four flat riblets; interspaces slightly narrower than the ribs with one prominent riblet in the center and a minor one on either side, the interspaces being much more prominent than those on the ribs; the whole surface is covered with undulating concentric lines of growth which almost obliterate all other sculpture near the periphery. Anterior ear less than one and one tenth times as large as the posterior, with four radiating riblets; the whole ear is covered with fine, close, growth lines becoming stronger towards the end; byssal notch not very prominent; byssal area with concentric area of growth only. Posterior ear squarish, somewhat rounded in the rear, with very faint or no riblets, but with a stronger concentric sculpture than the anterior. Umbo rather sharply pointed ending at the hinge line. Left valve resembling the right except that it is slightly more nodose, the ribs are narrower, and the interspaces are wider in proportion. The left valve is slightly less arched than the right.

Dimensions of the type: altitude 210 mm.; longitude 218 mm.; hinge line 115 mm.; diameter 95 mm.

Pecten nodosus Linnaeus of Margarita Island seems to be a descendant of *Pecten arnoldi*. It retains the shape and the number of ribs, and in a general way the sculpture of *P. arnoldi* but it is much more nodose. The riblets of *P. nodosus* are more abundant and more prominent than on *P. arnoldi*; however, the riblets in the interspaces are still only three or four and are more prominent than those on the ribs. The whole shell of *P. nodosus* has very fine and inconspicuous lines of growth while *P. arnoldi* has very conspicuous growth lines. The anterior ear of *P. nodosus* still keeps the ribs found in *P. arnoldi*, but it has besides a number of less prominent ones. The byssal area and the posterior ear of *P. nodosus* have both radiating riblets and concentric lines, the former being more prominent than the latter; while in *P. arnoldi* the riblets are very faint or do not exist at all.

Plate 5.



Pecten arnoldi Aguerrevere. Type specimen. Right valve. Slightly reduced.

Pecten subnodosus Sowerby of the Pacific Coast resembles *P. arnoldi* in the general shape of the shell and the number of ribs; however, the sculpture of *P. subnodosus* consists of fine numerous riblets equally distributed on the ribs and the interspaces, with few, widely separated lines of growth. The byssal hinge and the anterior ear of *P. subnodosus* are equally covered with many minor riblets; while *P. arnoldi* has only concentric growth lines on the byssal area and four riblets with concentric lines on the anterior ear. The posterior ear of *P. subnodosus* has radiating riblets; that of *P. arnoldi* has concentric sculpture. In its youth, *P. subnodosus* resembles more *P. arnoldi* than in its maturity; the interspatial riblets are then more pronounced than those on the ribs; the anterior ear has only four radiating riblets with concentric sculpture and the byssal area has only concentric sculpture.

The type specimen of *Pecten arnoldi* was found 1 and $\frac{3}{4}$ miles east of the Castle of Cumana, State of Sucre, Venezuela, S. A.

This, the largest known species of *Pecten*, is very appropriately named in honor of Ralph Arnold, in recognition of his contributions to our knowledge of the *Pecten* group, and to the stratigraphy of the Tertiary in California and Venezuela.

Horizon: probably Miocene.

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